

Serial No. 10/085,527
Atty. Doc. No. 1999P03591WOUS

Amendments To the Claims:

Please amend the claims as shown. Applicant reserves the right to pursue any canceled claims at a later date.

1. (amended) A method for the surface ~~treatment~~ preparation of a metal component ~~(1)~~ having a curved component surface ~~(3)~~ to accept a ceramic coating, comprising:

~~removing material from the component surface (3) along a contour line on the component surface (3) with a particle jet (7) that is generated from a particle source (5), the particle jet having a blasting distance (d), a blasting intensity, a blasting angle (α) and a blasting time, the particle jet characterized in that at least one of the distance, intensity, angle and time is matched to the contour line in such a way that a homogeneous surface roughness is established along the contour line.~~

measuring a contour line geometry of the curved surface;

inputting the measured geometry into a control system; and

controlling a plurality of spray parameters of the ceramic coating via the control system based on the geometry to direct a particle source toward the metal component, the spray parameters comprising: a blasting distance, a blasting intensity, a blasting angle and a blasting time such that at least one of the parameters remains constant during the surface preparation.

2. (amended) The method as claimed in claim 1, wherein ~~the matching at least one~~ of the jet spray parameters automatically remains constant during the spraying operation takes place by the control system.

Serial No. 10/085,527

Atty. Doc. No. 1999P03591WOUS

3. (amended) The method as claimed in claim 1, wherein the ~~particle source (5) and the component (1) are moved relative to one another~~ the metal is a superalloy.

4. (amended) The method as claimed in claim 1, wherein the blasting distance of the particle source (5) is moved relative to the component (1) in such a way that the blasting distance (d) is remains constant.

5. (amended) The method as claimed in claim 1, wherein the particle source (5) is moved relative to the metal component (1) ~~in such a way that~~ so that the blasting angle (α) is remains constant.

6. (amended) The method as claimed in claim 1, wherein the component (1) has a base body (11) with a base material (13), the base body (11) having the component surface (3) which, for a first coating (15) to be applied to the base body (11), is treated with a first coating material (17).

7. (amended) The method as claimed in claim 6, wherein the first coating material (17) used is an MCrAlX alloy, where M represents one or more elements comprising iron, cobalt and nickel, Cr represents chromium, Al represents aluminum and X represents one or more elements selected from the group consisting of yttrium, rhenium and the rare earths.

Serial No. 10/085,527

Atty. Doc. No. 1999P03591WOUS

8. (amended) The method as claimed in claim 6, wherein the first coating ~~(15)~~ also has the component surface ~~(3)~~ which, for a second coating ~~(19)~~ to be applied to the component ~~(1)~~, is treated with a second coating material ~~(21)~~.

9. (amended) The method as claimed in claim 1, wherein the component ~~(1)~~ has a base body ~~(11)~~ with a base material ~~(13)~~, a first coating ~~(15)~~ comprising a first coating material ~~(17)~~ being applied to the base body ~~(11)~~, and the coated component ~~(1)~~, for a second coating ~~(19)~~ to be applied to the component ~~(1)~~, being treated with a second coating material ~~(21)~~.

10. (amended) The method as claimed in claim 8, wherein, in the coating process, a ceramic is used as the second coating material ~~(21)~~.

11. (canceled)

12. (amended) The method as claimed in claim 1, wherein the component ~~(1)~~ used is a turbine rotor blade ~~(23)~~, a turbine guide vane or a heat shield element ~~(25)~~ of a combustion chamber.

13. (amended) The method as claimed in claim 1, wherein the blasting angle ~~(α)~~ on the component surface ~~(3)~~ is approximately 20° to 90°.

14. (canceled)

Serial No. 10/085,527
Atty. Doc. No. 1999P03591WOUS

15. (canceled)

16. (canceled)

17. (canceled)

18. (amended) A method for surface ~~treating~~ preparation of a metal component (1) of a gas turbine having a curved surface (3) to accept a ceramic coating, comprising:

~~removing material from the component surface (3) along a contour line on the component surface (3) using a particle jet (7) from a particle source (5) having blasting angle (α) of approximately 20° to 90°, a blasting distance (d), a blasting intensity, and a blasting time,~~

~~wherein at least one of the distance, intensity, angle and time of the particle jet (7) is matched to the contour line to establish a homogeneous surface roughness along the contour line.~~

measuring a contour line geometry of the curved surface;

converting the measured geometry into input data; and

inputting the data into a control system, the control system configured to control a plurality of spray parameters based on the data and direct a particle source toward the metal component,

wherein at least one of the parameters remains constant during the surface treatment and the surface preparation results in the curved surface having a substantially uniform surface roughness.

Serial No. 10/085,527

Atty. Doc. No. 1999P03591WOUS

19. (amended) The method as claimed in claim 18, wherein the particle source (5) is moved relative to the component (1) ~~in such a way~~ so that the blasting distance (d) ~~is~~ remains constant.

20. (amended) The method as claimed in claim 18, wherein the particle source (5) is moved relative to the component (1) in such a way that the blasting angle (α) ~~is~~ remains constant.

21. (new) The method as claimed in claim 1, wherein the blasting distance is measured from the particle source to a point of impingement of a the spray on the metal component surface.

22. (new) The method as claimed in claim 1, wherein the blasting angle is measured as an angle between a direction of the spray and a local normal to the metal component surface at a point of impingement.

23. (new) The method as claimed in claim 1, wherein the blasting intensity is measured as a flow rate of the particle.

24. (new) The method as claimed in claim 1, wherein the blasting time is measured as a residence time of the spray on a selected section of the contour line.

Serial No. 10/085,527**Atty. Doc. No. 1999P03591WOUS**

25. (new) The method as claimed in claim 18, wherein the spray parameters include:
a blasting distance, a blasting intensity, a blasting angle and a blasting time.